

FIG. 1

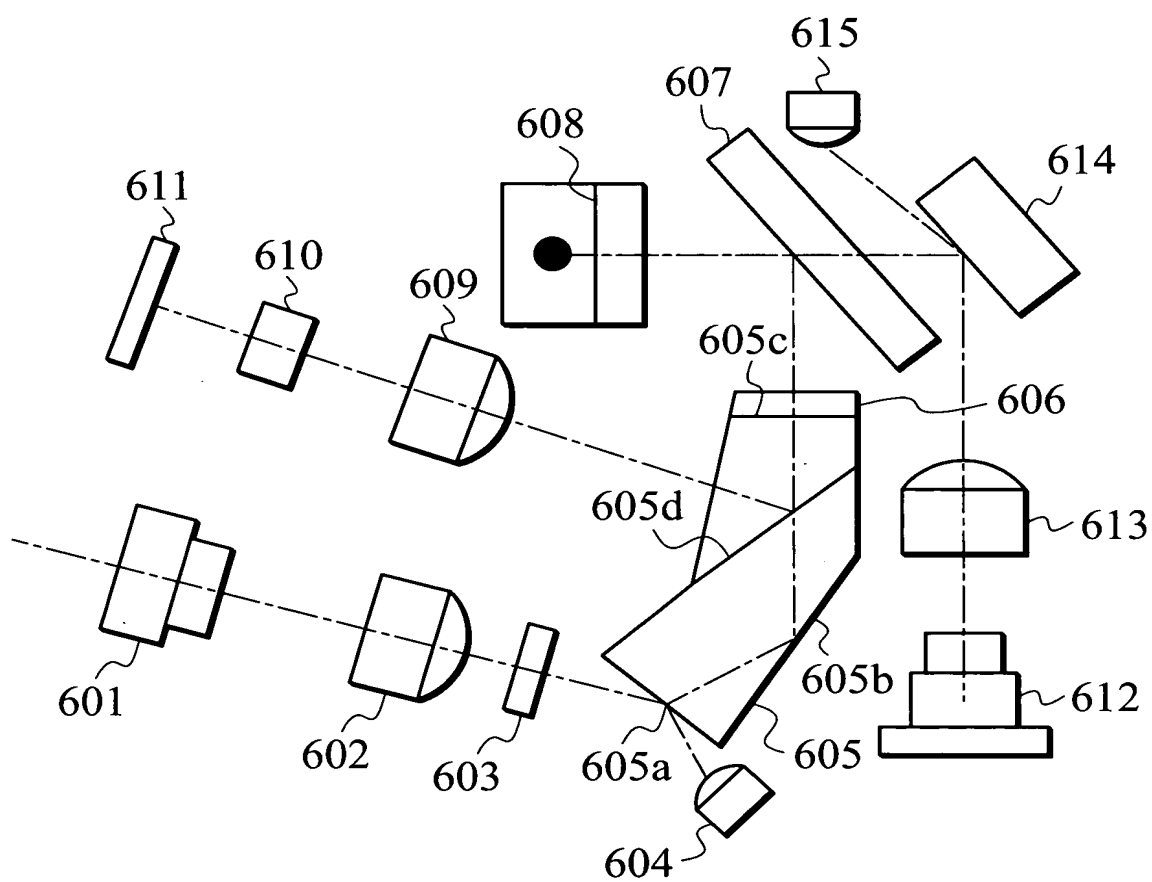


FIG. 2

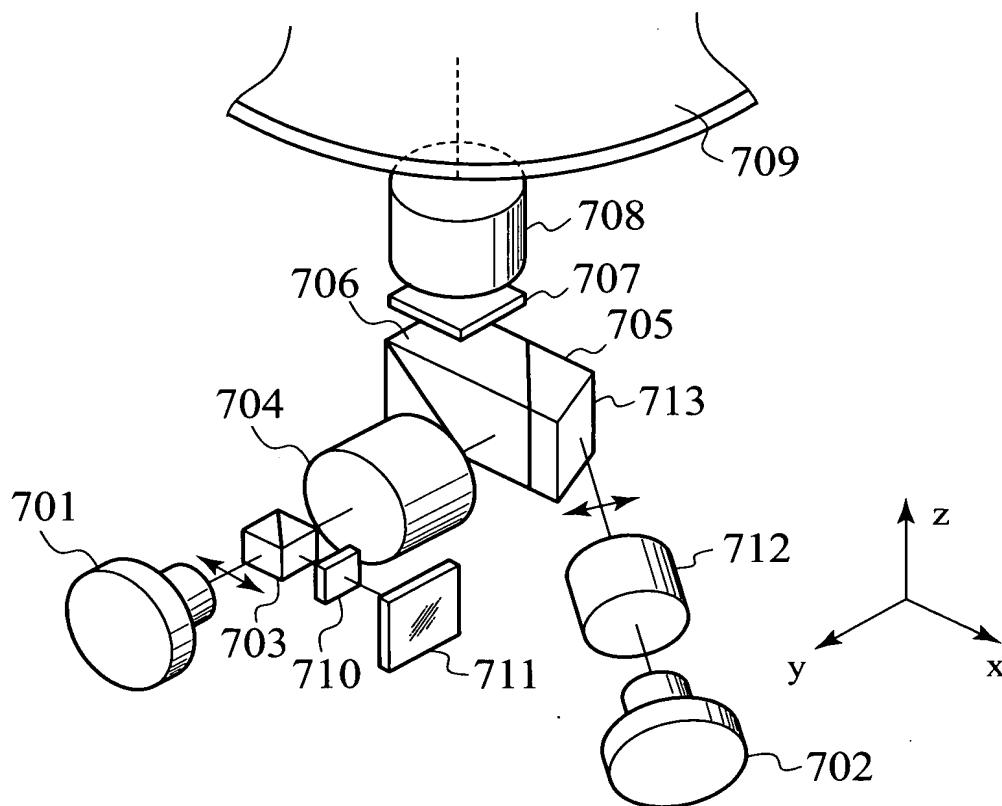


FIG. 3

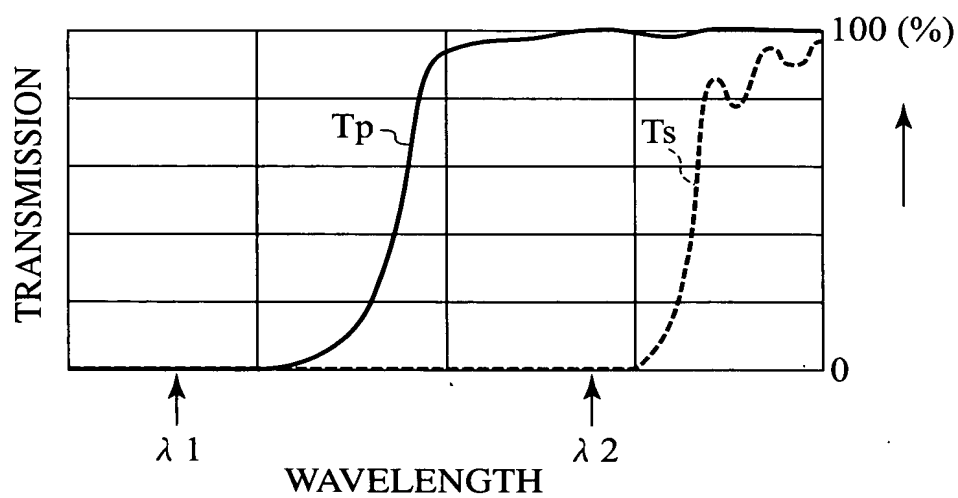


FIG. 4

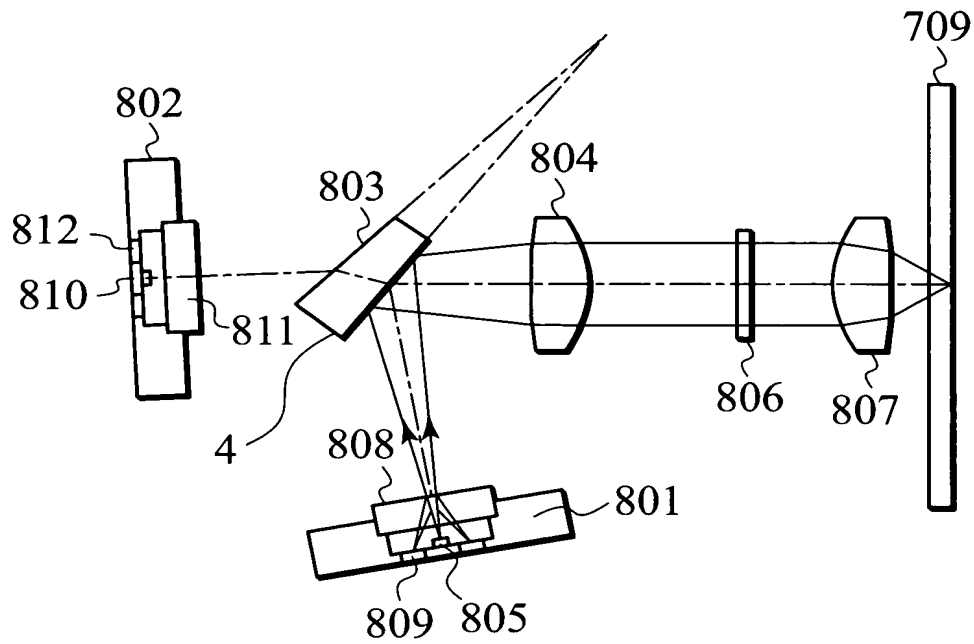


FIG. 5

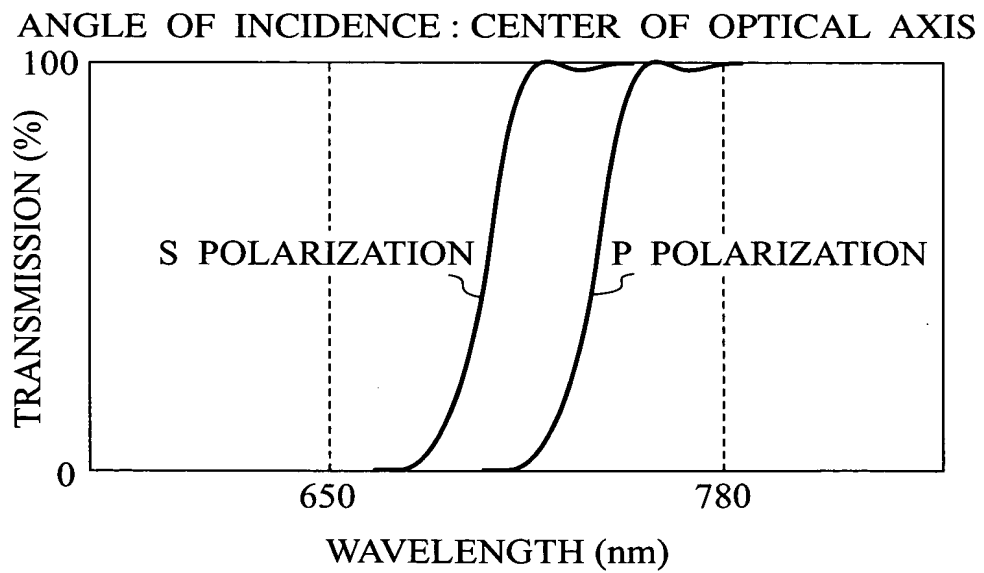


Diagram illustrating an optical system 100, which is part of a display device 201. The system includes a light source 112 emitting 780nm BAND light. The light path is shown with dashed lines. The light passes through a lens 109, a beam splitter 105, a lens 104, a lens 102, and a lens 101. The beam splitter 105 is tilted at an angle θ . The system is labeled with various components and their reference numerals: 100, 201, 203, 108, 201a, 155, 109, 153, 106, 105b, 105a, 118, 104, n , θ , 117, 103, 102, 101, 650nm BAND, 780nm BAND, X, Y.

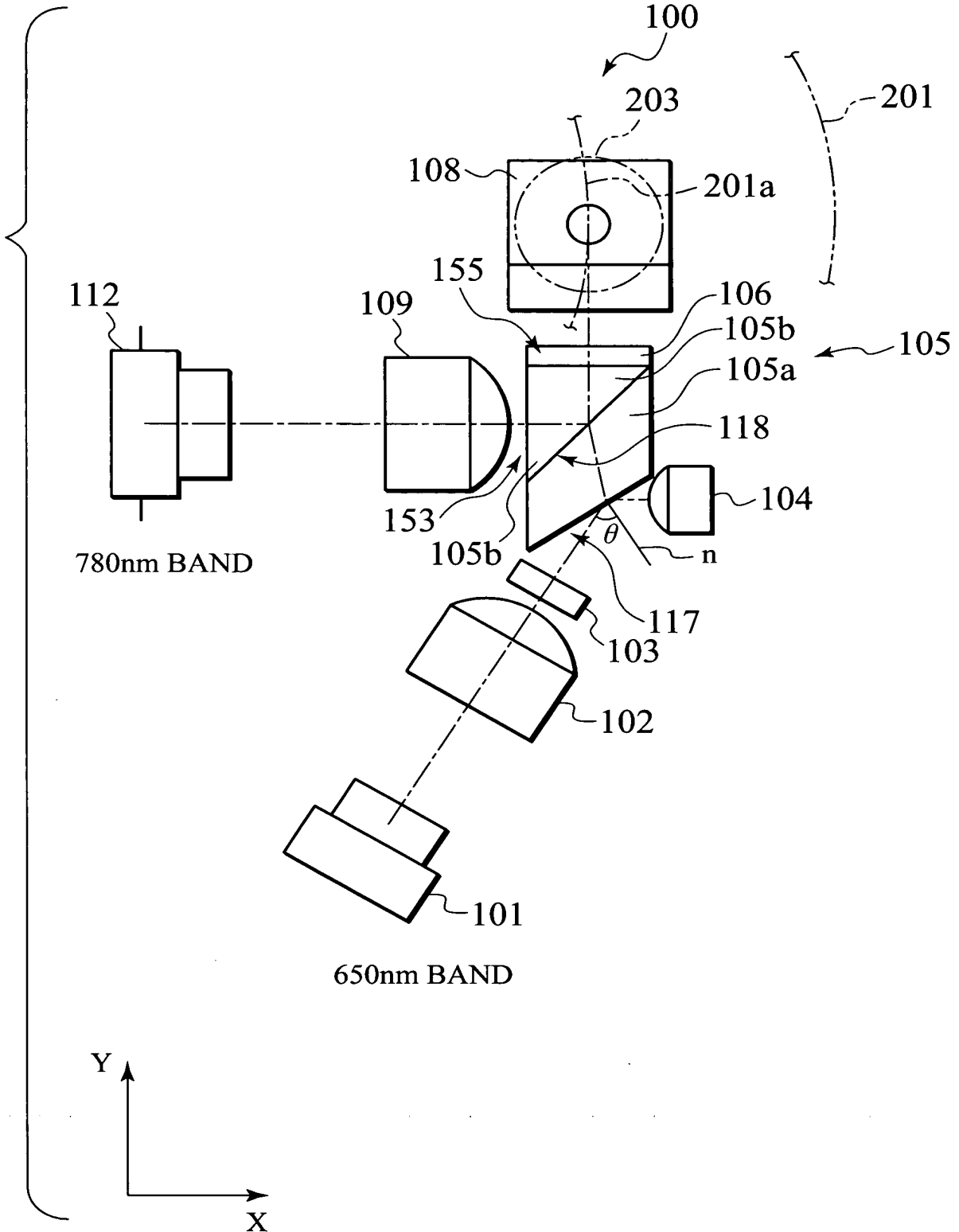


FIG. 7

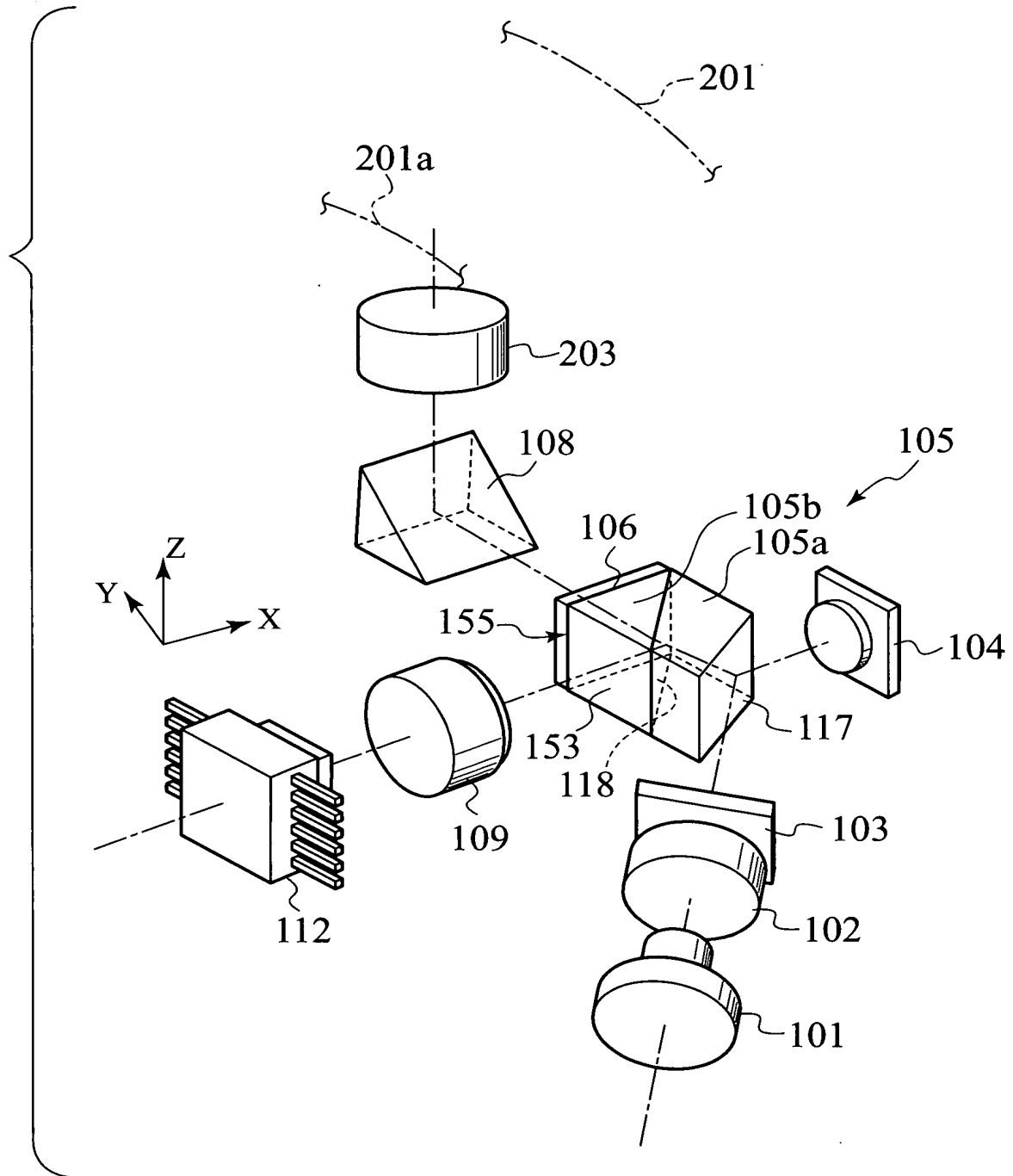
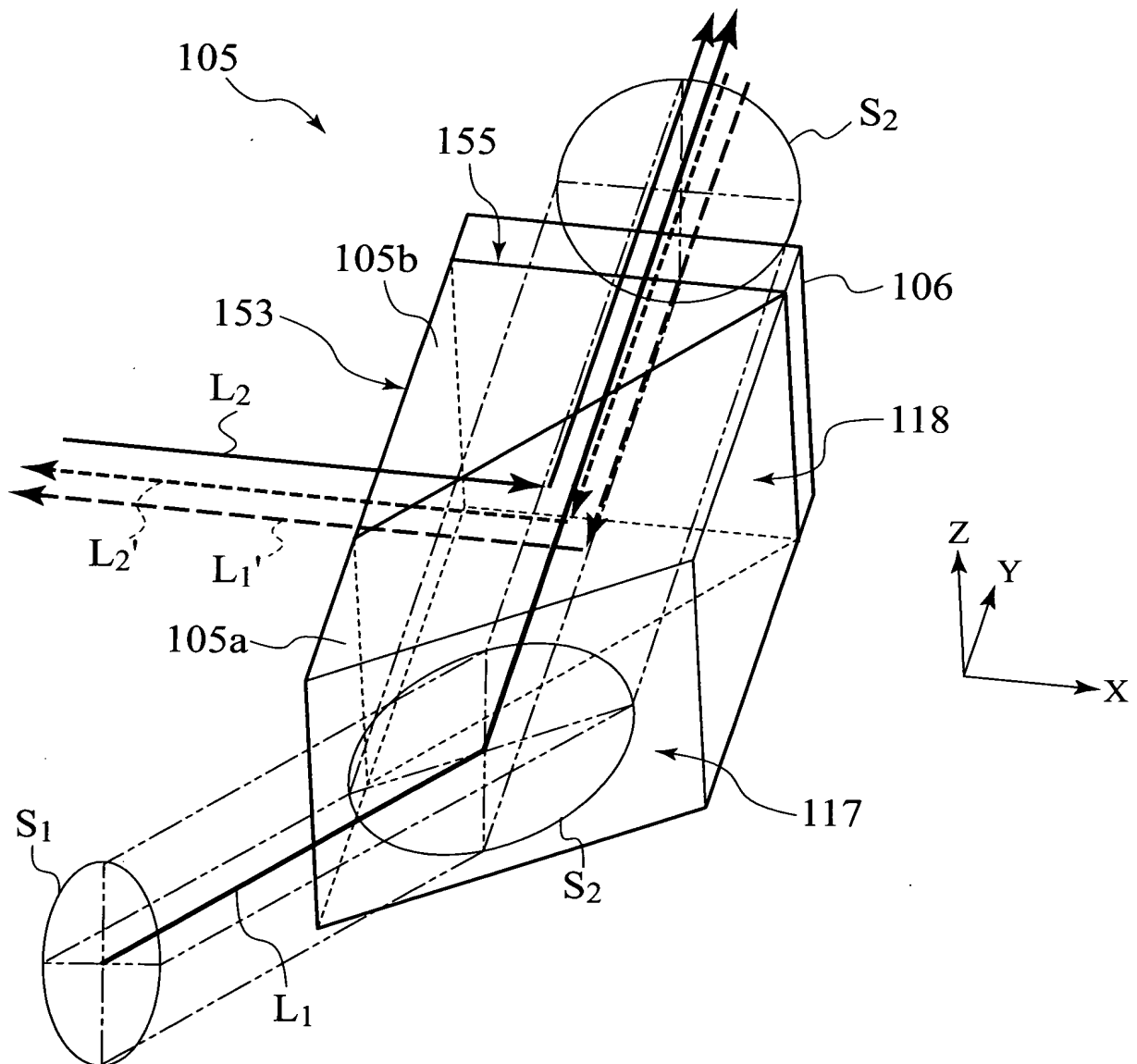


FIG. 8



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FIG. 9

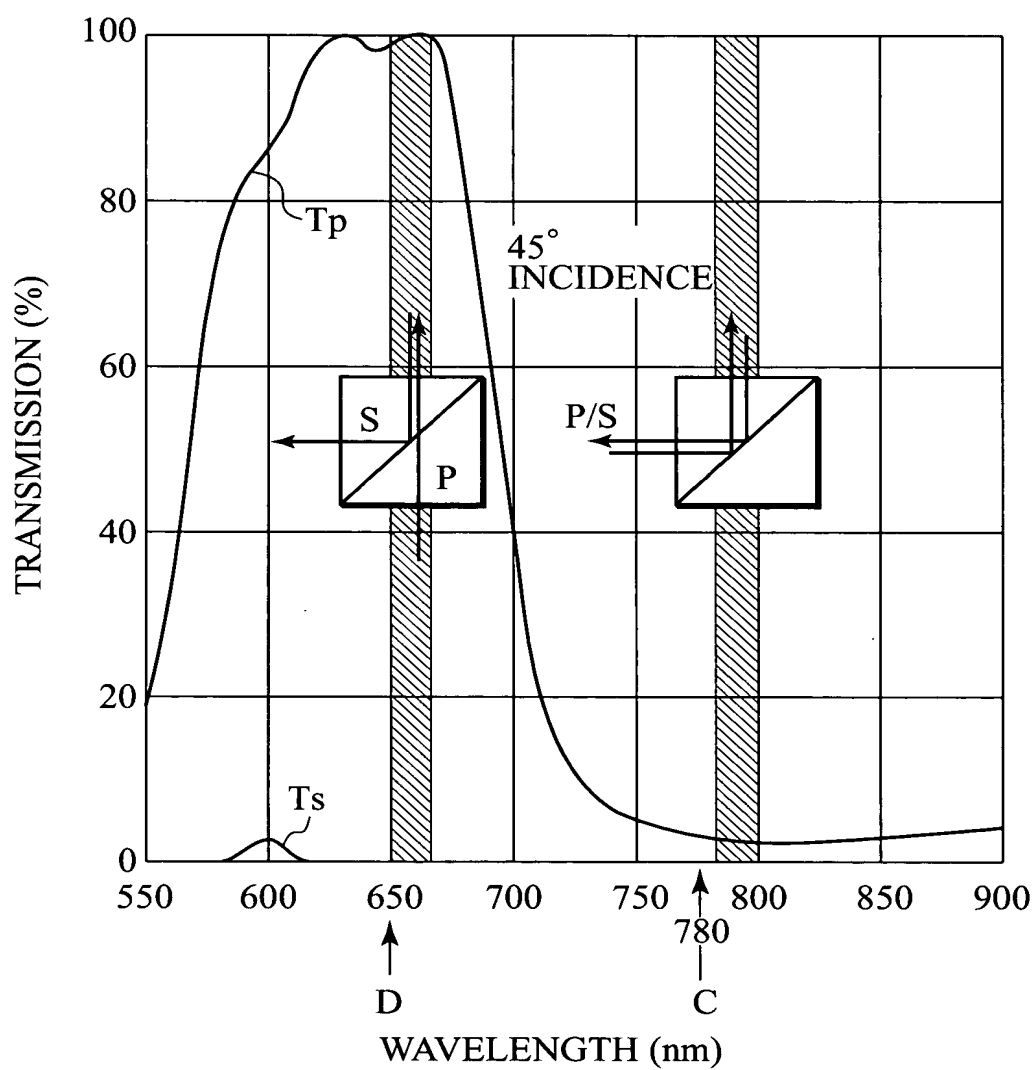


FIG. 10

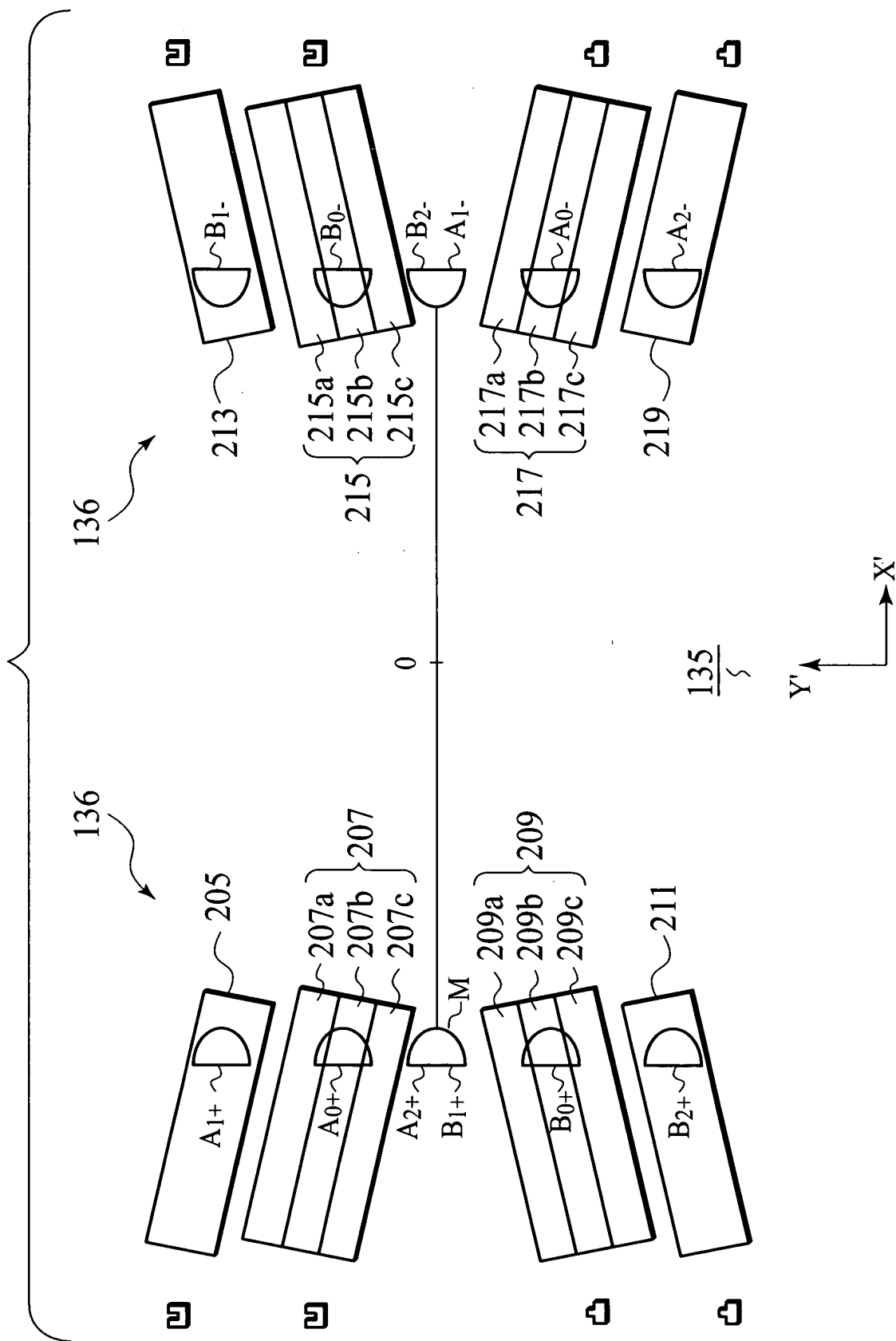
A DESIGN EXAMPLE OF PBS /
NPBS LAYER FOR WAVELENGTH SELECTION

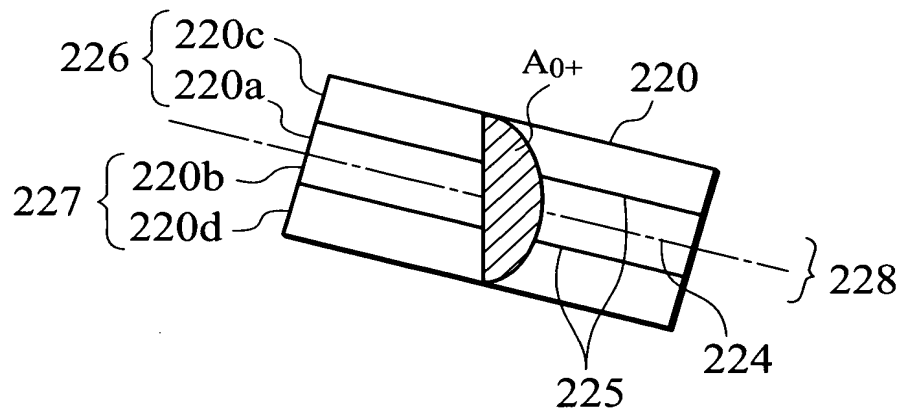
		MATERIAL	REFRACTIVE INDEX (nd) [587.56nm]	THICKNESS [nm]
	GLASS	SF57	1.847	
1	L	Na ₃ AlF ₆	1.35	658.89
2	H	TiO ₂	2.24	322.7
3	L	Na ₃ AlF ₆	1.35	513.28
4	H	TiO ₂	2.24	114.12
5	L	Na ₃ AlF ₆	1.35	495.34
6	H	TiO ₂	2.24	139.92
7	L	Na ₃ AlF ₆	1.35	574.28
8	H	TiO ₂	2.24	107.23
9	L	Na ₃ AlF ₆	1.35	494.98
10	H	TiO ₂	2.24	178.46
11	L	Na ₃ AlF ₆	1.35	215.26
	GLASS	SF57	1.847	

ANGLE OF INCIDENCE 45[deg.]

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FIG. 12





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FIG. 15

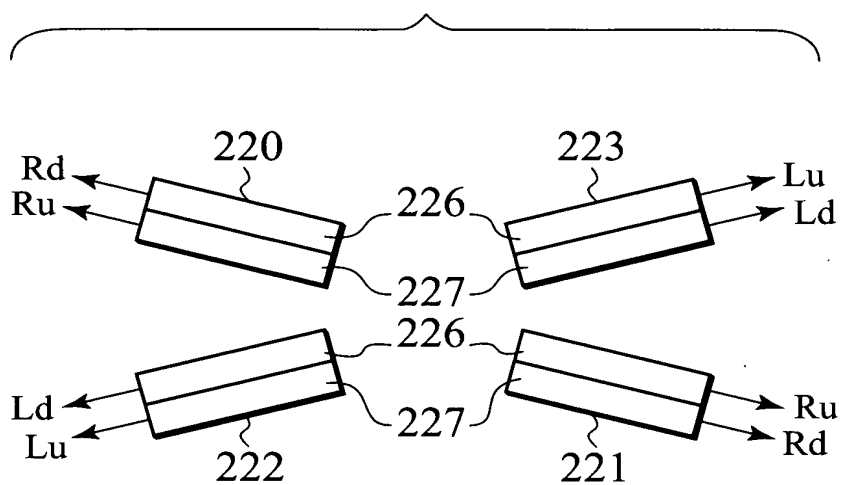


FIG. 16

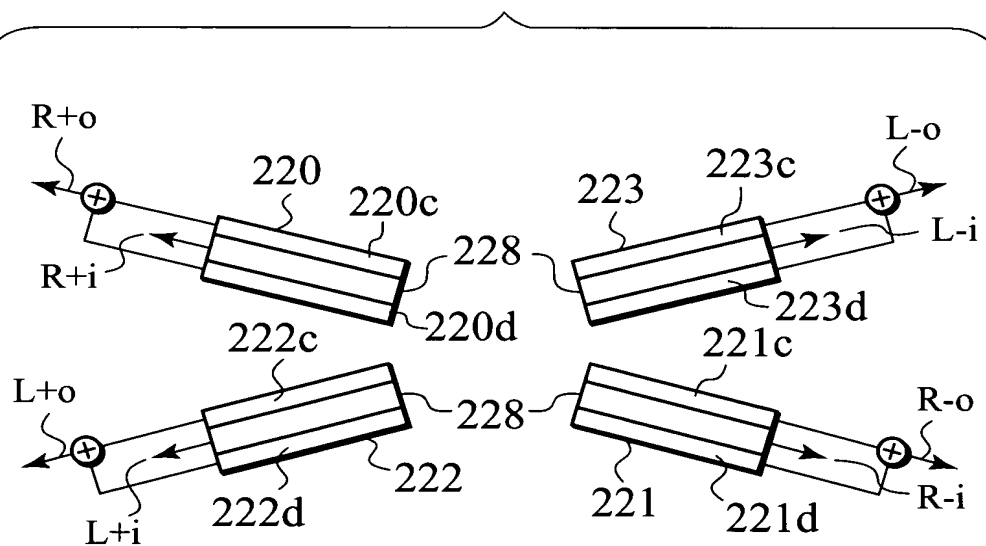


FIG. 17

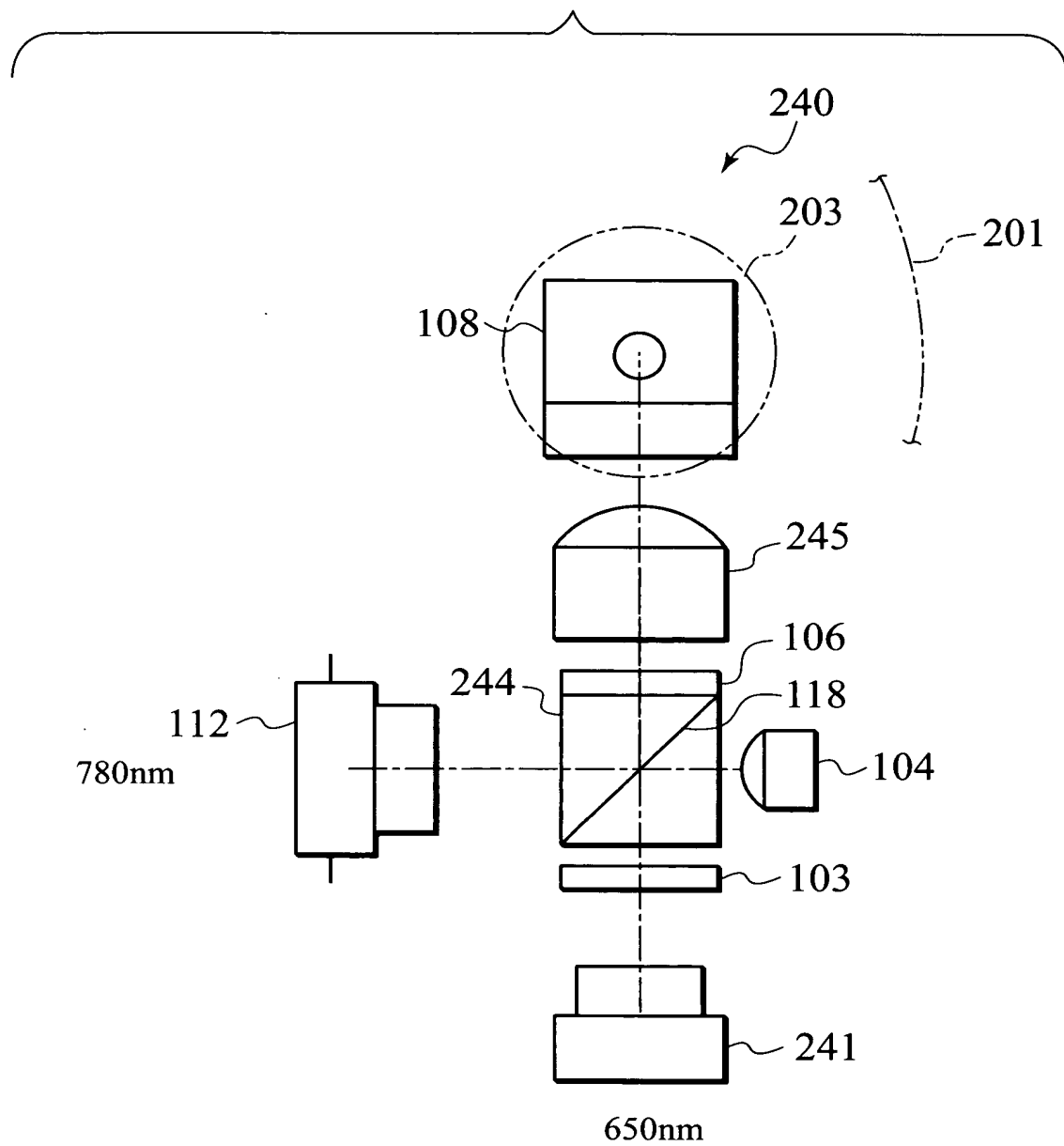


FIG. 18

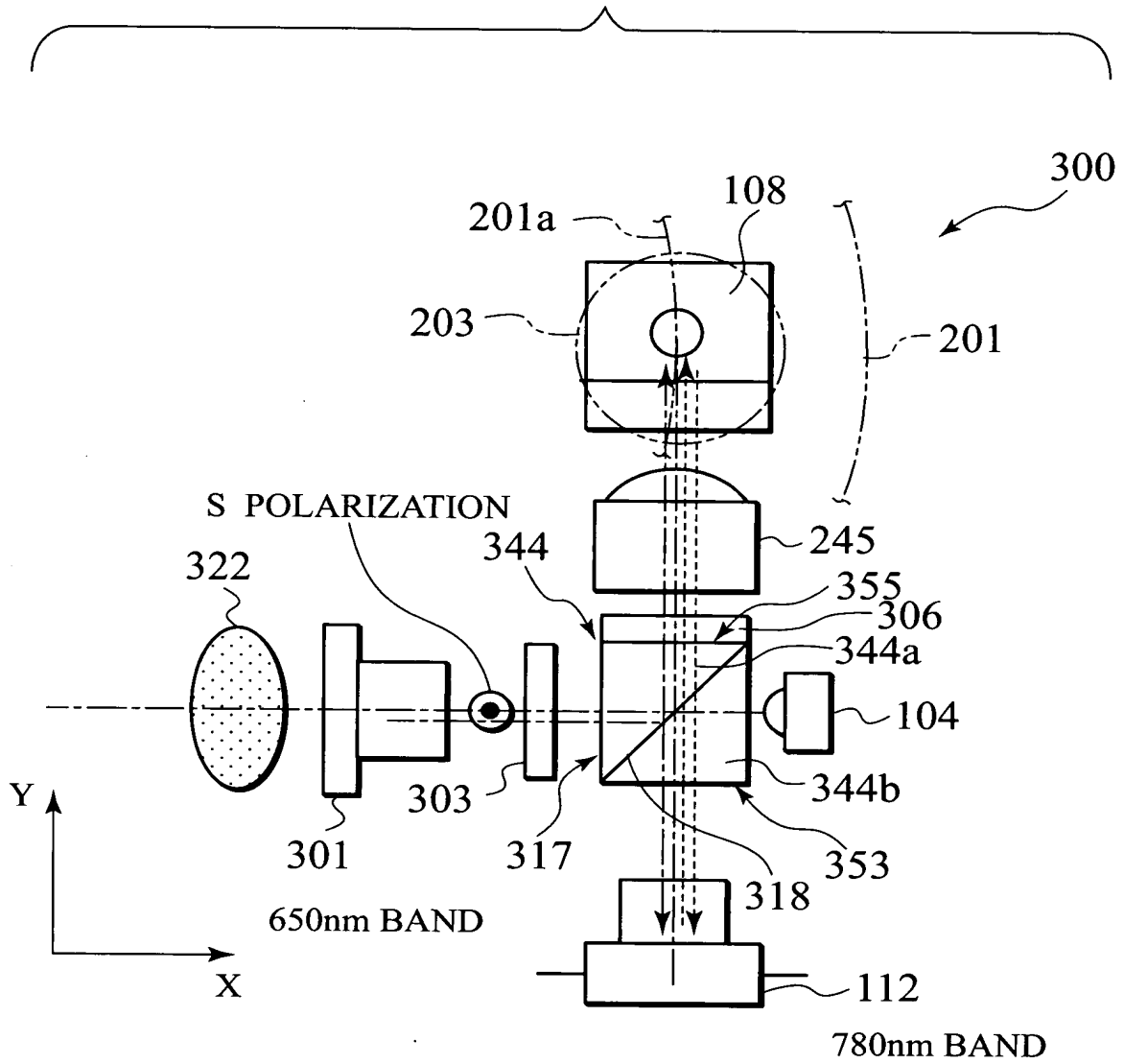


FIG. 19

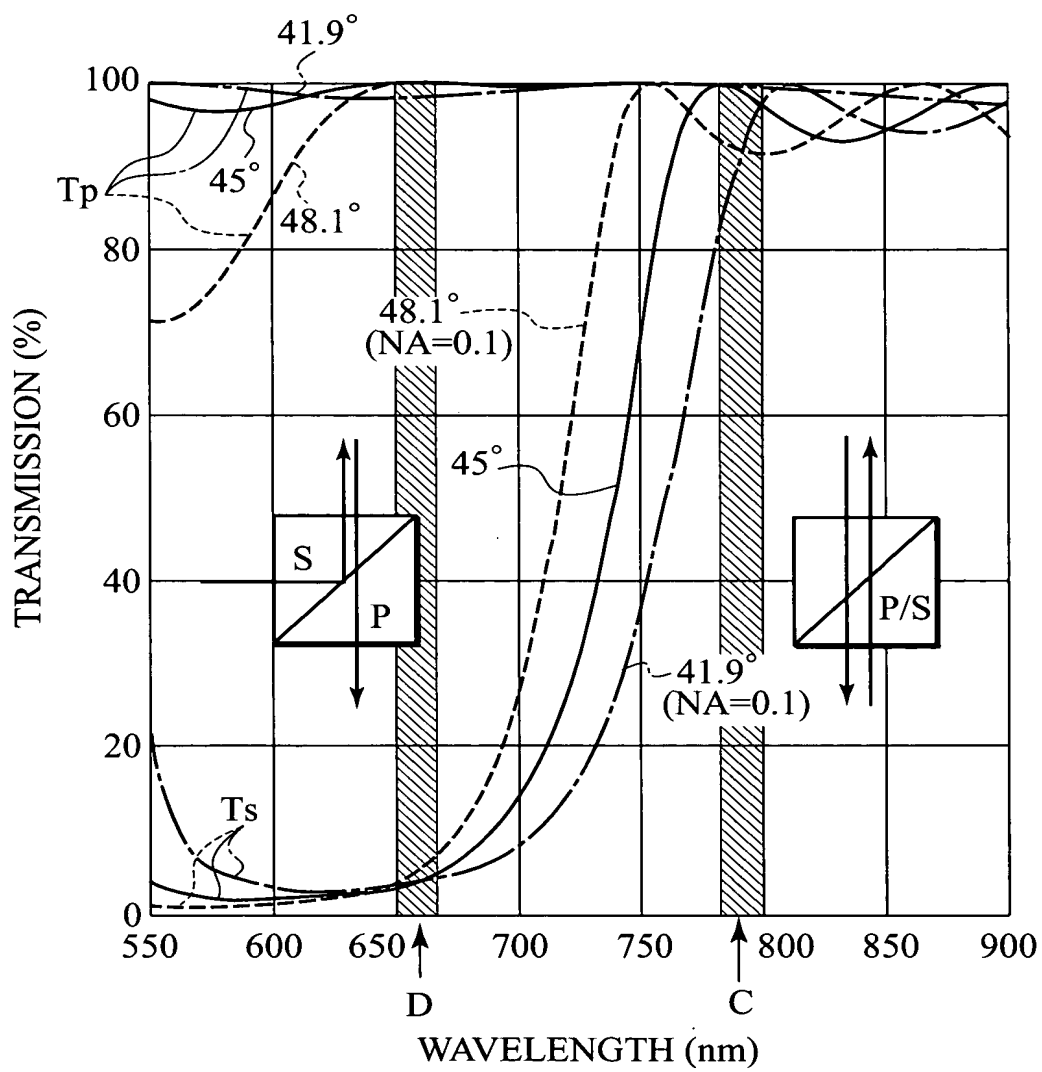
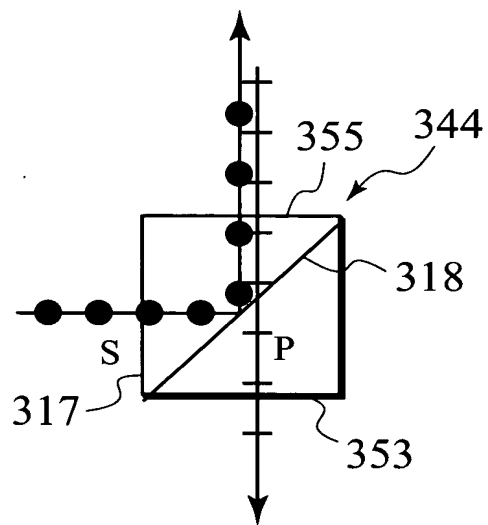


FIG. 20

A DESIGN EXAMPLE OF PBS /
NPBS LAYER FOR WAVELENGTH SELECTION

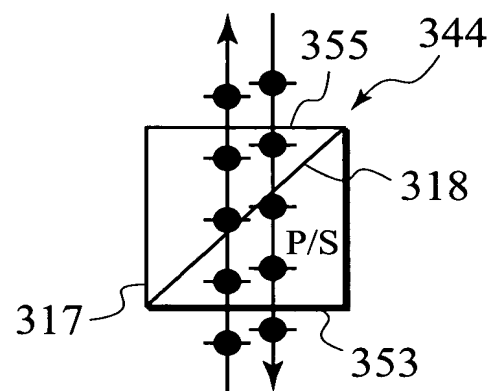
		MATERIAL	REFRACTIVE INDEX (nd) [587.56nm]	THICKNESS [nm]
	GLASS	SF57	1.847	
1	L	LaF ₃	1.55	106.46
2	H	TiO ₂	2.24	121.18
3	L	LaF ₃	1.55	45.00
4	H	TiO ₂	2.24	130.45
5	L	LaF ₃	1.55	86.73
6	H	TiO ₂	2.24	131.12
7	L	LaF ₃	1.55	86.72
8	H	TiO ₂	2.24	130.44
9	L	LaF ₃	1.55	44.98
10	H	TiO ₂	2.24	121.14
11	L	LaF ₃	1.55	106.36
	GLASS	SF57	1.847	

FIG. 21A



POLARIZATION SEPARATION

FIG. 21B



POLARIZATION INDEPENDENT

FIG. 22

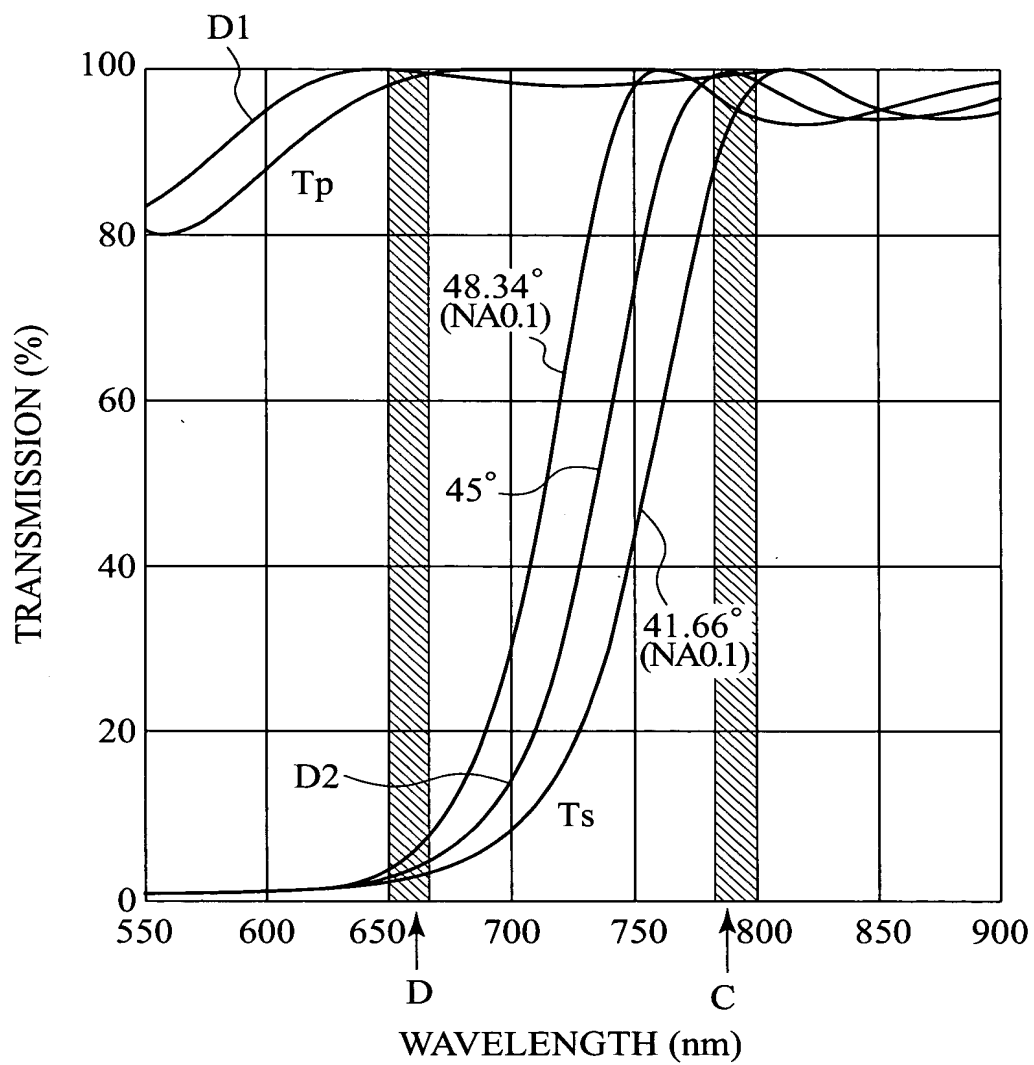


FIG. 23

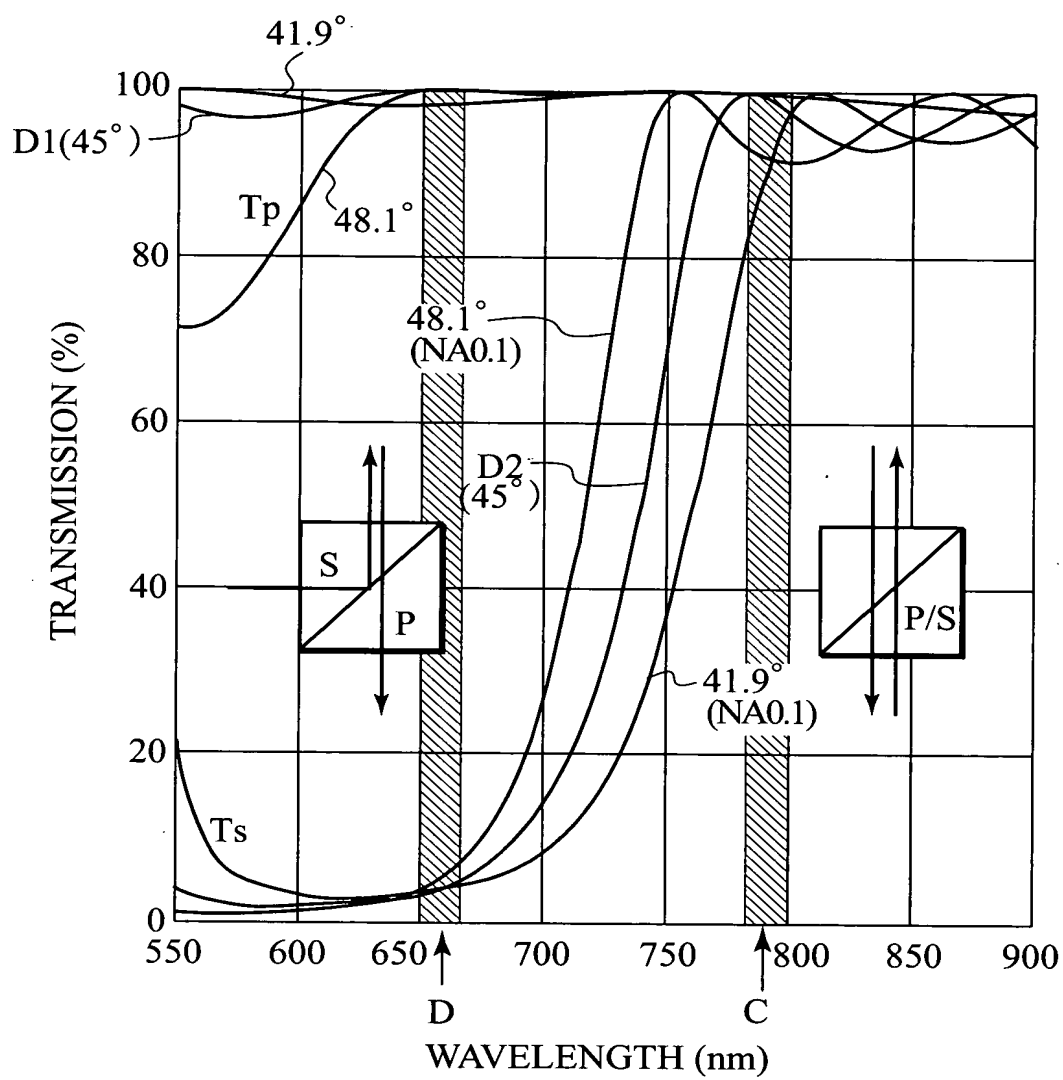


FIG. 24A

GLASS/	
1	106.46F
2	121.18T
3	45F
4	130.45T
5	86.73F
6	131.12T
7	86.72F
8	130.44T
9	44.98F
10	121.14T
11	106.36F PHYSICAL THICKNESS [nm]
/GLASS	

FIG. 24B

GLASS:SF57 ($n_d = 1.847$)	
T : TiO_2	($n_d = 2.24$)
F : LaF_3	($n_d = 1.55$)

FIG. 25A

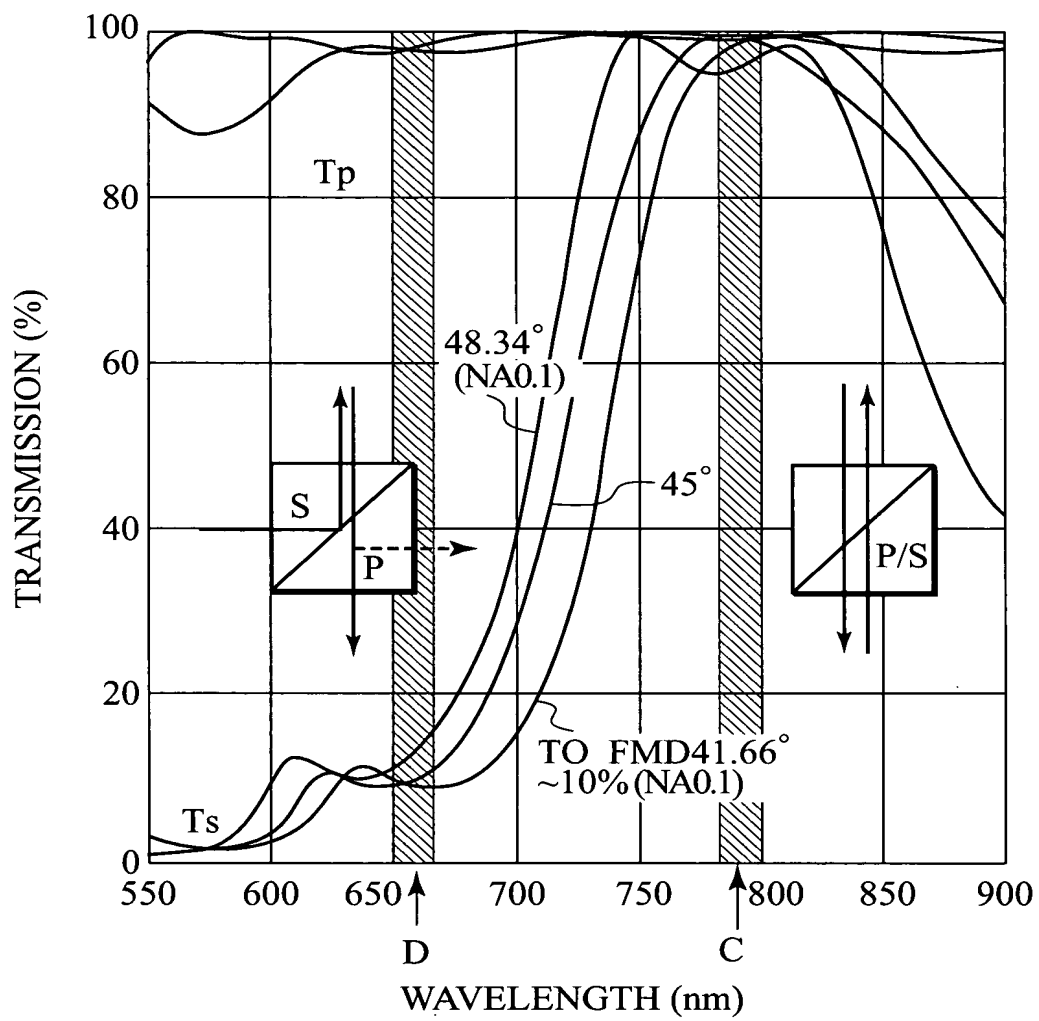


FIG. 25B

GLASS/	
1	65.2S
2	691.21T
3	109.17S
4	95.61T
5	109.74S
6	90.02T
7	86.82S
8	82.62T
9	529.41S PHYSICAL THICKNESS [nm]
/GLASS	

FIG. 25C

GLASS:SF1	($n_d = 1.718$)
T : TiO ₂	($n_d = 2.24$)
S : SiO ₂	($n_d = 1.46$)

FIG. 26

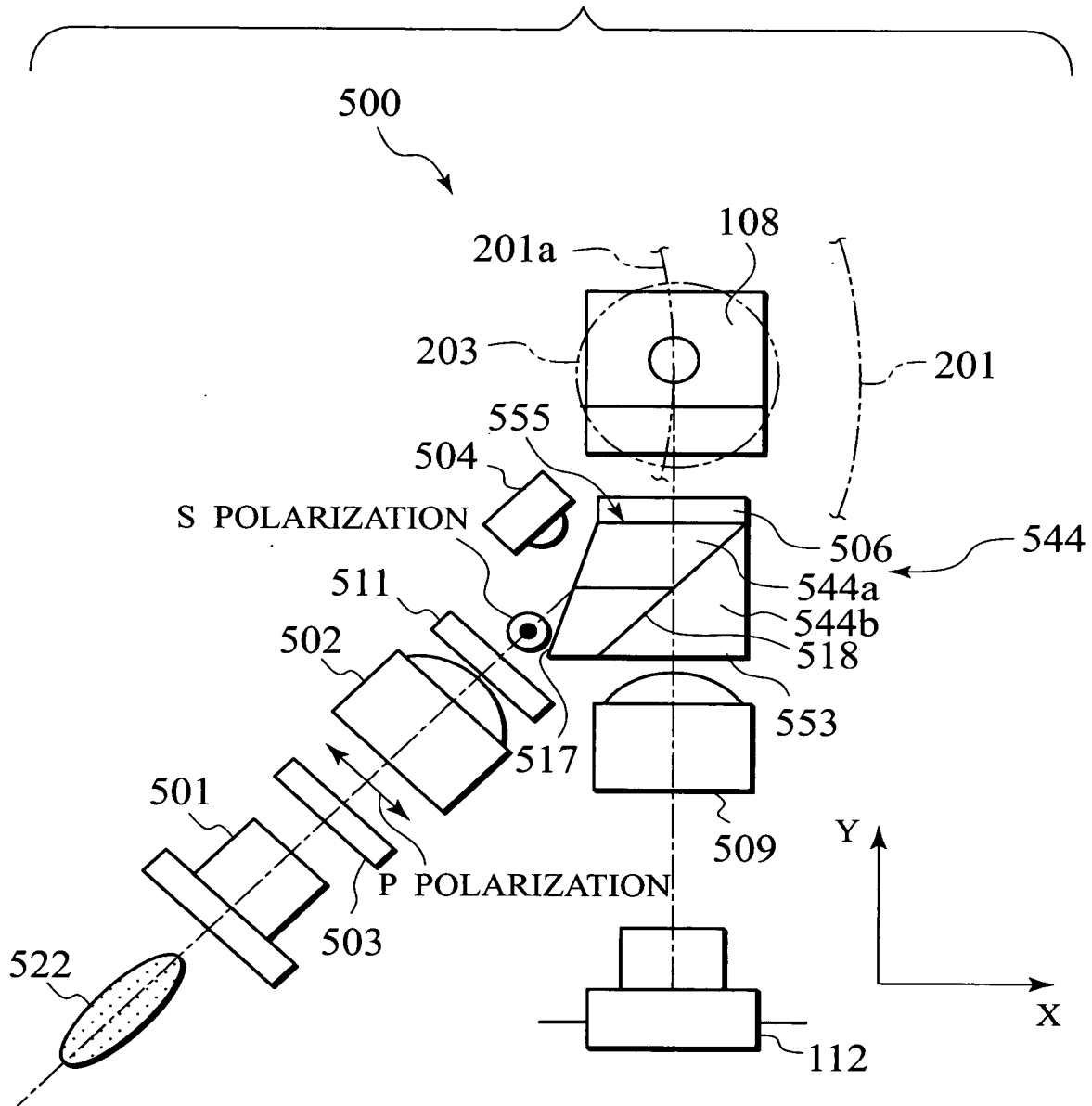


FIG. 27

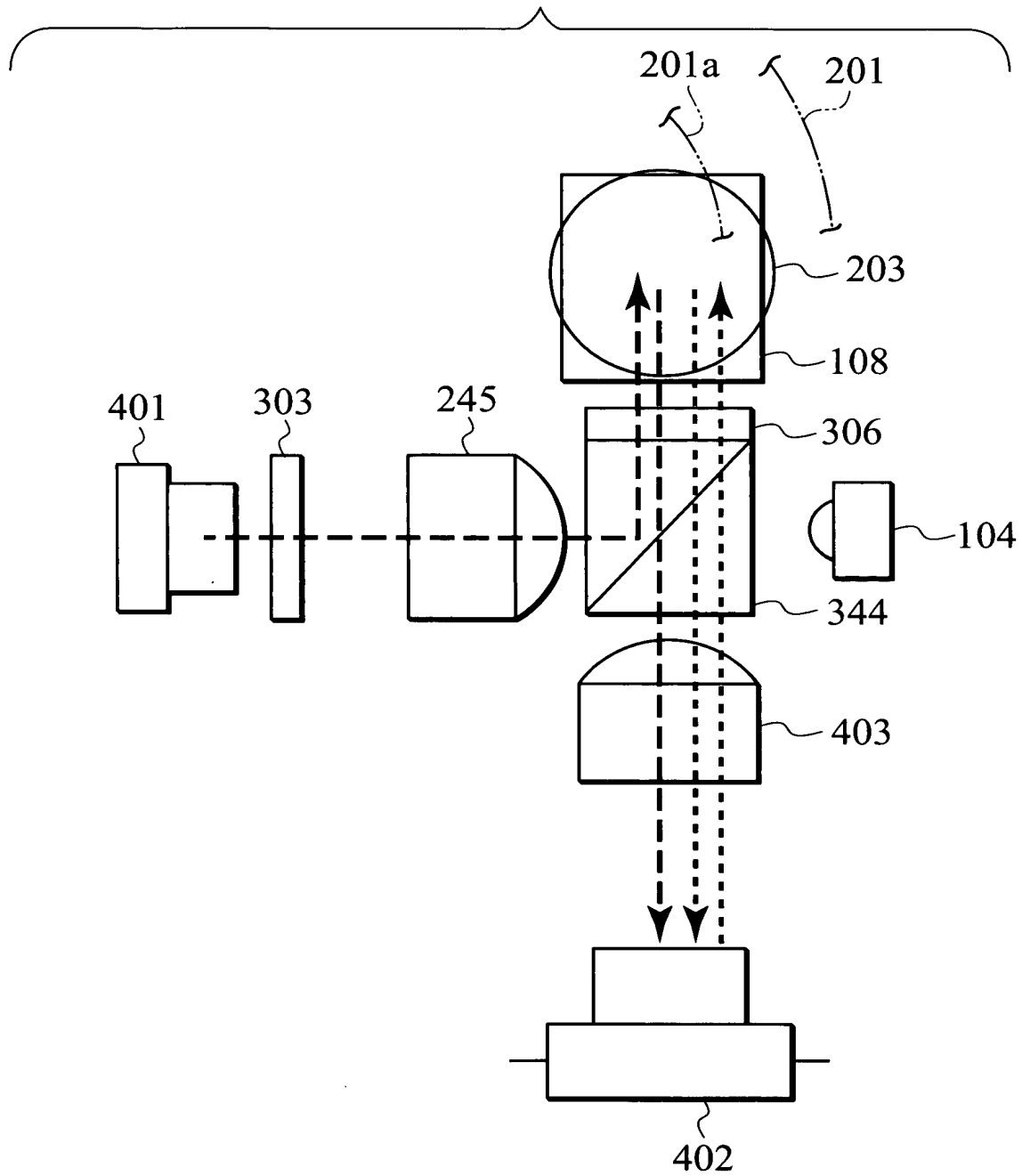


FIG. 28A

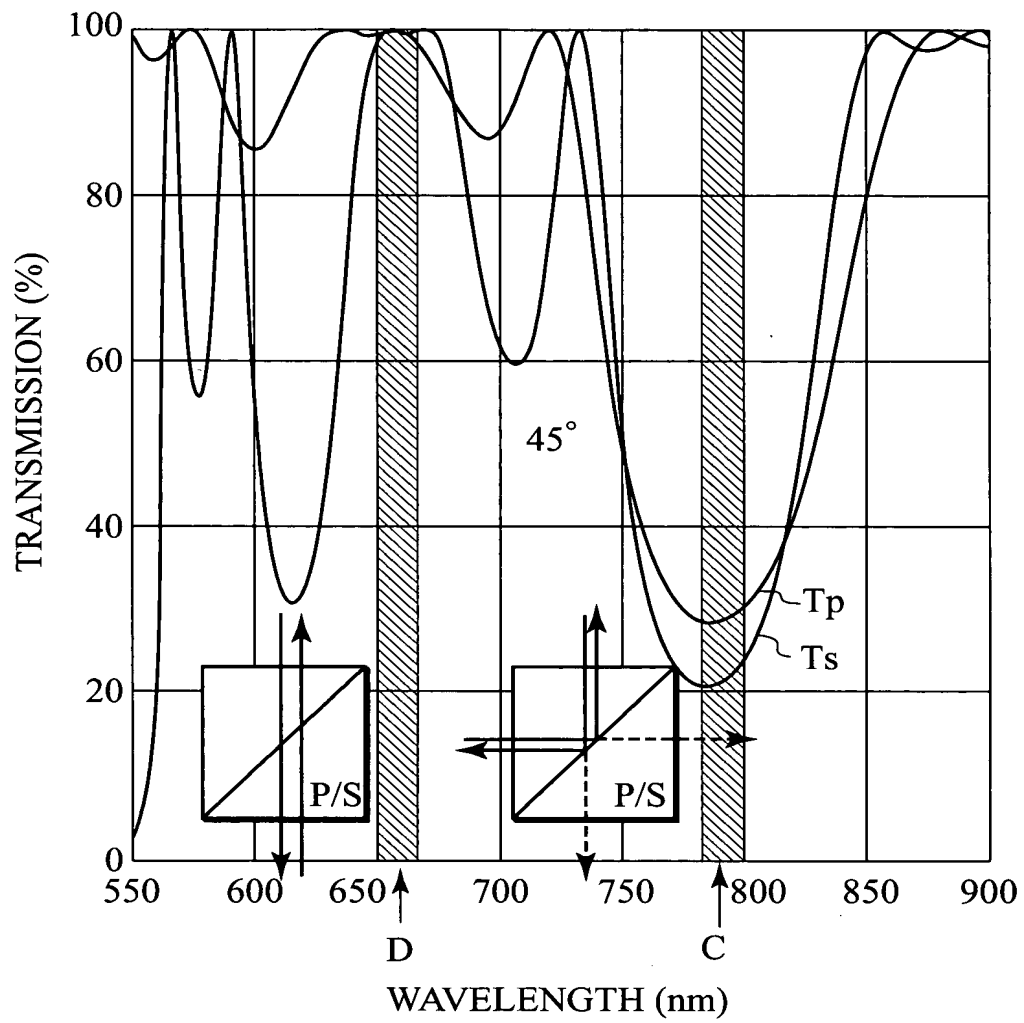


FIG. 28B

GLASS/	
1	.40284H
2	1.17335M
3	1.15856L
4	.9177M
5	.96964H
6	.9128M
7	1.06792L
8	.83839M
9	.89342H
10	1.04261M
11	1.13475L
12	1.04261M
13	.89342H
14	.83839M
15	1.06792L
16	.9128M
17	.96964H
18	.9177M
19	1.15856L
20	1.17335M
21	.40284H PHYSICAL THICKNESS [nm]
/GLASS	

FIG. 28C

GLASS:BK7 ($n_d = 1.5163$)H : ($n_d = 2.35$)M : ($n_d = 1.58$)L : ($n_d = 1.35$) λ DESIGN = 1100 [nm] *QWOT=1

FIG. 29

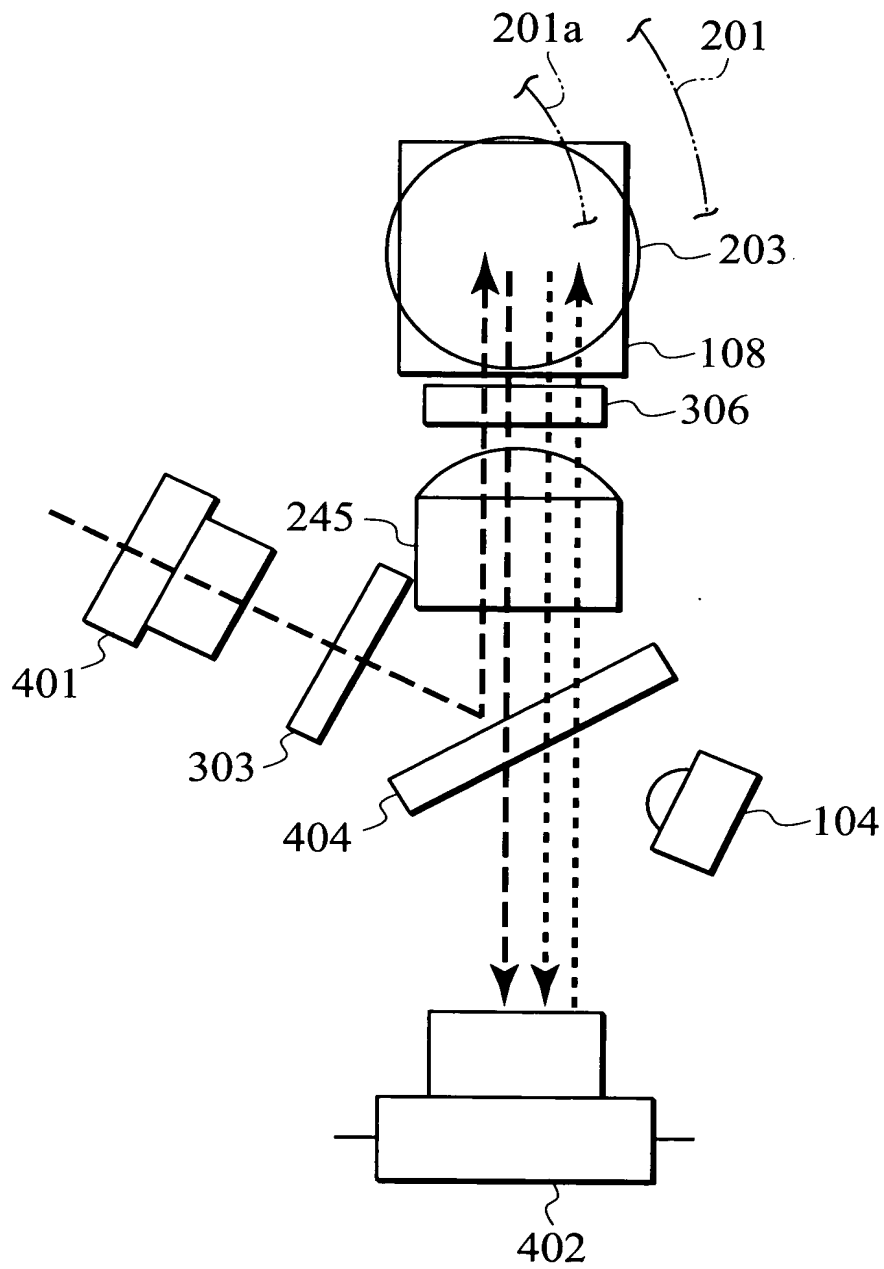
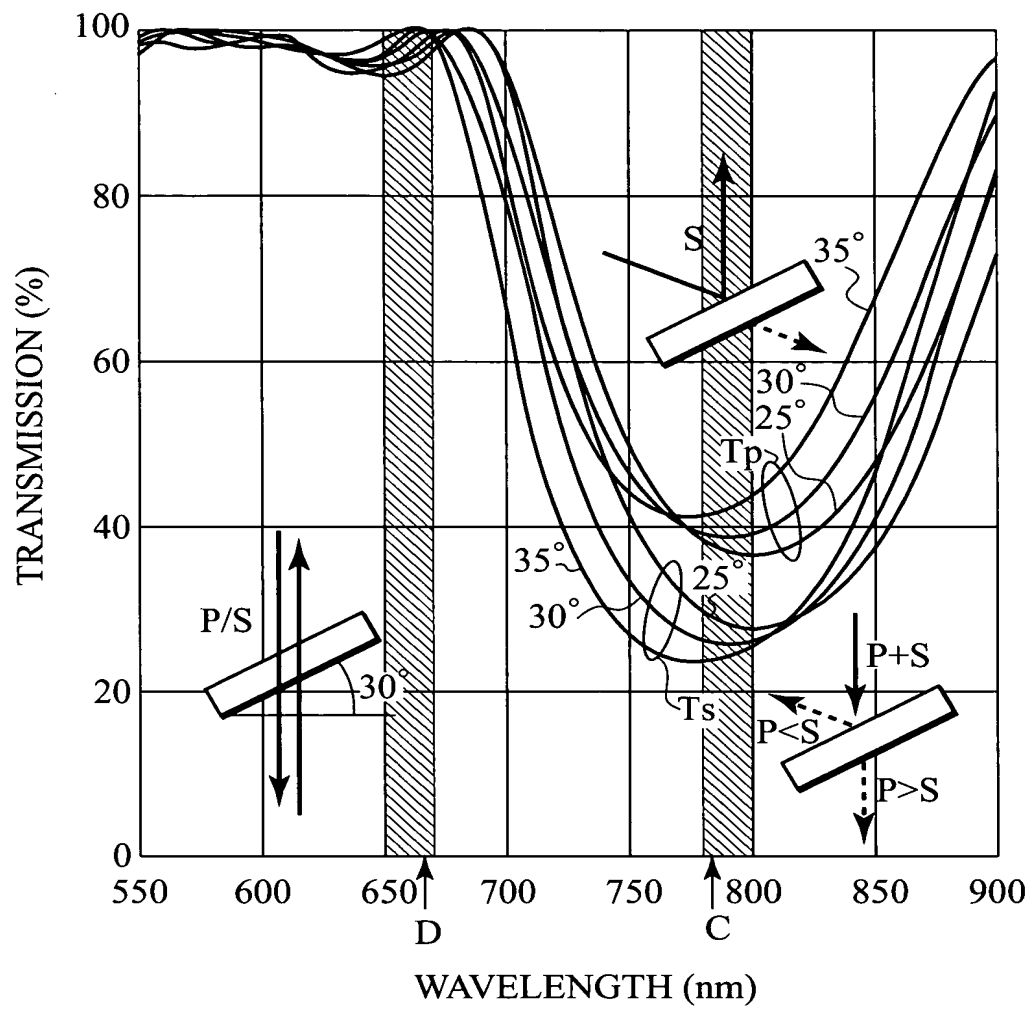


FIG. 30A



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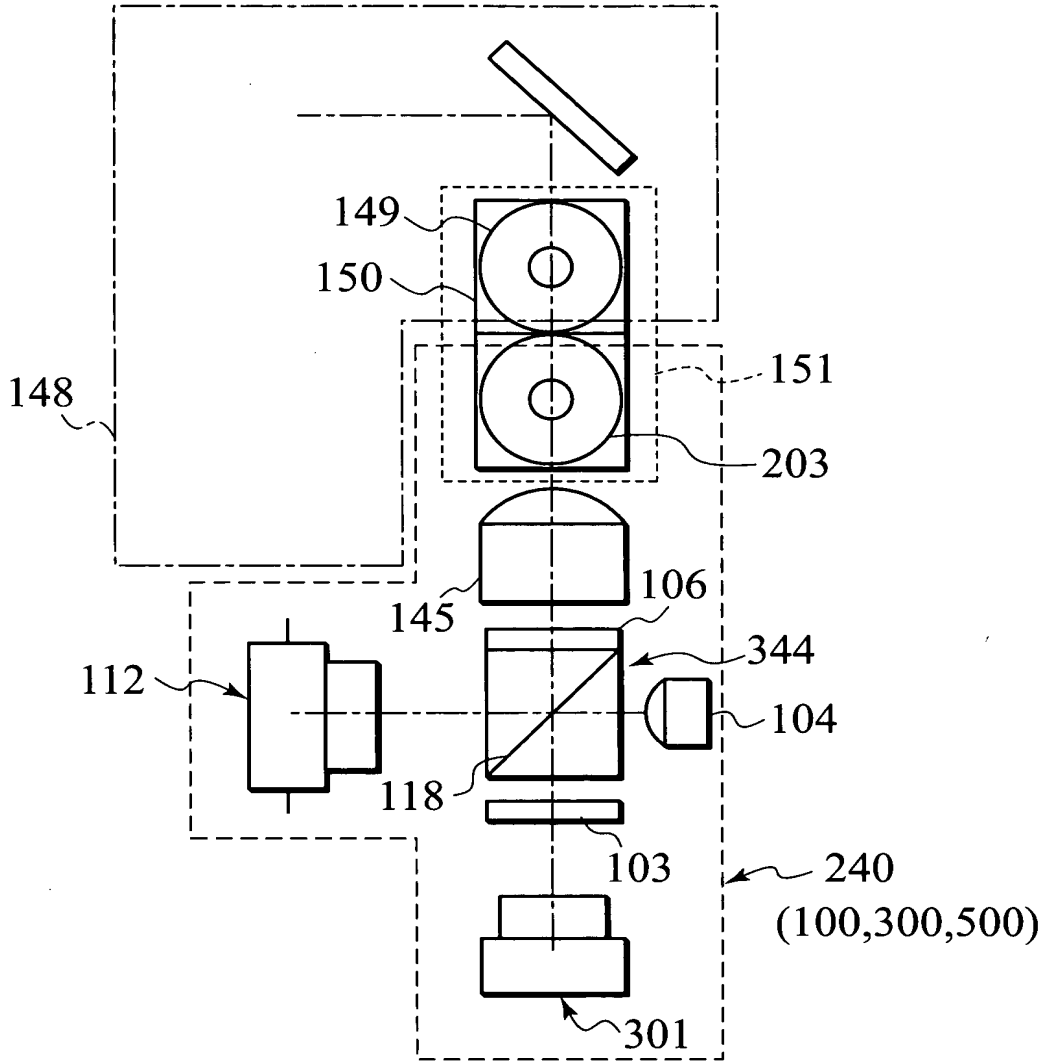
FIG. 30B

AIR/	
1	1.01541H
2	1.08053L
3	.98725H
4	.7809L PHYSICAL THICNESS [nm]
/GLASS	

FIG. 30C

GLASS : HIGH TRANSPARENCY (MEASUREMENT)	
H : TiO ₂	(n _d = 2.24)
L : MgF ₂	(n _d = 1.38)
λ DESIGN = 2370 [nm]	
*QWOT=1	

FIG. 31



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FIG. 32

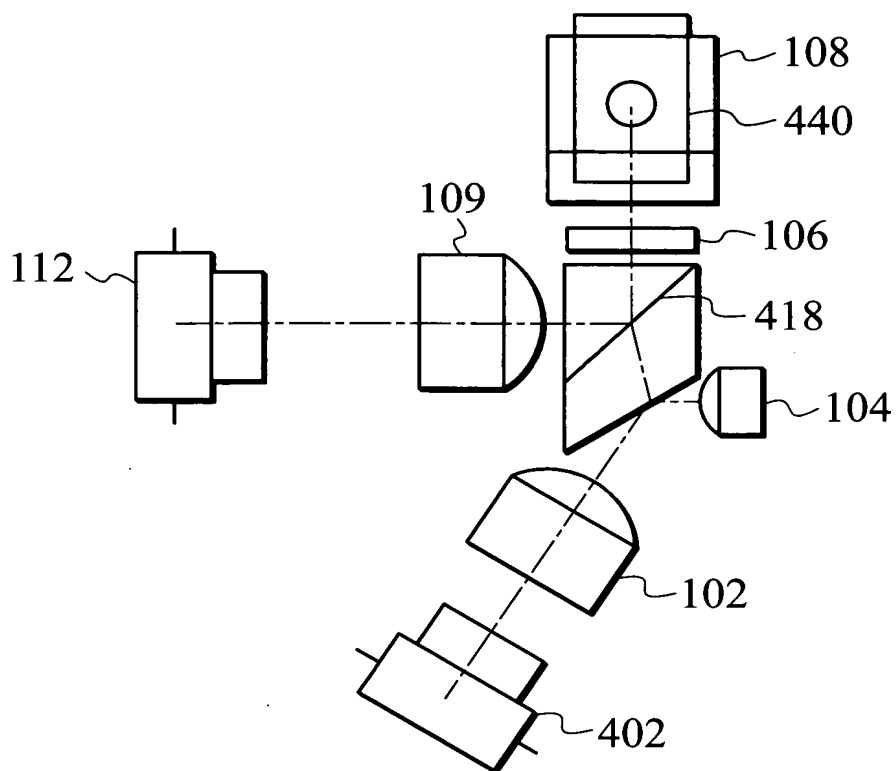


FIG. 33

